AF/2834

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

15/Reply Brief

B Evans 11-13-99

In re application of

Hideyuki HAYASHI, et al.

Appln. No.: 09/045,799 Group Art Unit: 2834

Filed: March 23, 1998 Examiner: K. Tamai

For: INSERT CONDUCTOR FOR USE IN A GENERATOR AND HAVING STRUCTURE FOR PREVENTING DEFORMATION

REPLY BRIEF PURSUANT TO 37 C.F.R. § 1.193(b)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In accordance with the provisions of 37 C.F.R. § 1.193(b), Appellants respectfully submit this Reply Brief to respond to the various points of arguments raised in the Examiner's Answer (Paper No. 10) of September 10, 1999. Entry of this Reply Brief is respectfully requested.

Claims 1-6

Claim 1 of the present application requires;

> 1. An insert conductor comprising:
> a conductor having a wiring section which includes a plurality of wires, an outer frame surrounding the wiring section, and connections which connect said outer frame and said wiring section and which interconnect said wires; and
> a deformation preventer which is provided on said conductor such that the deformation preventer extends over said wires and which prevents the conductor from being deformed by a resin injection pressure applied during insert resin molding.

Therefore, claim 1 requires the deformation preventer to extend over the wires and to prevent the conductor from being deformed when pressure is applied during a subsequent resin injection process.

On page 7 of the Examiner's Answer and referring to the Byrd et al. reference, the Examiner states;

> The insulating member 13 extending between the wires 17 and mechanically unites the wires, which inherently provides some support to the wires to prevent deformation when encased in the plastic. The claims BROADLY recite a deformation preventer, without further specifying any structural requirements for the deformation prevention member. This BROAD limitation is met by the insulating member 13, which inherently provides more support to the wires 17 than if no member extended between the wires.

First, there is absolutely no teaching or suggestion within Byrd et al. that the insulating member 13 prevents deformation of the wires 17. The Examiner has simply concluded, based on no teaching in the reference whatever, that a thin flexible sheet of insulation placed partially underneath a set of wires, to protect the wires from damage due to high temperatures, provides some physical support to the wires. This assertion, while not only unsupportable by the disclosure of Byrd et al., is entirely counter to the disclosure.

At column 5, lines 31-34, Byrd et al. discloses "[t]he plastic is flexible so that the die can be mounted under it and the leads can be flexed downwardly into contact with the printed circuit board." Thus, deformation of the leads is not only allowed and, hence, **not prevented** by the plastic insulating member 13, deformation is actually facilitated by the insulating member 13. Therefore,

contrary to the Examiner's assertions, because the insulating member 13 of Byrd et al. is made of flexible plastic and allows deformation, or flexing, of the wires, Byrd et al. fails to teach or suggest the claimed deformation preventer. Byrd et al. actually teaches away from the present invention.

Second, the flexible insulating member of Byrd et al. is located only partially beneath the wires 17 and the wires are much thicker and resistant to deformation than the insulating member itself. Therefore, when, and if, pressure is applied to the wires sufficient to deform them from their natural shape, the thinner flexible insulating member would provide no additional support to the wires beyond the support that the wires would have alone. In fact, if such pressure were applied, the wires would support the insulating member, not vice versa, as contended by the Examiner.

Even if a more rigid material were used for the insulating member, instead of flexible plastic, the wires would still be susceptible to deformation since the physical boundaries of the wires 17 extend well beyond the boundaries of the insulating member 13. (See Fig. 7). Thus, if pressure were applied to the wires 17, sufficient to deform the wires, the insulating member 13 would **not** prevent the wires from being deformed since the insulating member 13 is located only beneath a portion of the wires 17. In fact, if the insulating member were more rigid than the wires 17, and pressure was applied to the wires, the wires would likely be deformed more than if no insulating member were provided at all since the insulating member would act as a fulcrum beneath the wires around which the wires would be deformed.

Lastly, the Examiner asserts that the insulating member 13 of Byrd et al. "provides more support to the wires 17 than if no member extended between the wires." Not only is this assertion incorrect, for the reasons set forth above, but even if it were true it fails to meet the requirements of

the claim. Claim 1 expressly requires a deformation ***preventer*** which ***prevents*** the conductor from being deformed. The obvious reason for providing a deformation preventer is to stop or avoid any deformation to the wires from happening at all. The Examiner's contention that a relatively thin, flexible, plastic insulating member provides more support to the wires than would otherwise exist, is misplaced. The claim requires that deformation of the wires be ***prevented.*** Thus, deformation is to be avoided or precluded, altogether. It is simply not sufficient merely to slow down or hinder deformation by some minimal degree or to *provide **some** support* as would, according to the Examiner, the thin plastic insulating member 13 of Byrne et al. Contrary to the Examiner's assertion, claim 1 does not claim the deformation preventer so broadly as to include a thin flexible sheet of plastic that sits partially beneath the wires, i.e., the insulating member of Byrd et al. Instead, the claimed deformation preventer requires that deformation of the wires be completely avoided.

Therefore, a skilled artisan would not have interpreted the flexible insulating member 13 of Byrne as providing any mechanical strength, or deformation prevention, to the wires 17.

The Examiner further asserts, on page 4 of the Examiner's Answer, that "Nakazawa teaches an insert conductor 23 which is encapsulated by resin insert molding." However, Nakazawa discloses nothing relevant to the claimed deformation preventer. Thus, for the preceding reasons, the combination of Byrd et al. with Nakazawa fails to teach or suggest the claimed deformation preventer.

Accordingly, Applicant respectfully maintains that the rejection of claim 1 under §103 over the combination of Byrd et al. with Nakazawa is unsustainable and Applicant requests that the Board reverse the Examiner's §103 rejection to claim 1 as such.

With respect to claims 2-6, which depend directly or indirectly from claim 1, Applicant requests that the Board reverse the respective §103 rejections to these claims as well for at least the same reasons as set forth for claim 1. Each rejection to claim 2-6 relies on Byrd et al. for teaching the claimed deformation preventer. As discussed previously, Byrd et al. fails to teach or suggest this limitation. Accordingly, any rejection premised upon the contention that Byrd et al. teaches or suggests the claimed deformation preventer should be reversed.

Claims 9-14

Independent claim 9 of the present application recites as follows;

> 9. A vehicle generator comprising:
> a fan 95) which generates airflow;
> a regulator (18);
> a stator coil (16);
> an brush holder (67); and
> a ventilation guide (19) which is fixed to a peripheral portion of said brush holder, wherein the ventilation guide guides airflow, generated by said fan, to said regulator and said stator coil;
> **said brush holder comprising**:
> a conductor which has a wiring section composed of a plurality of wires, an outer from surrounding the wiring section, and connections which connect said outer frame and said wiring section and which interconnect said wires; and
> **an insulating member which prevents the conductor from being deformed by a resin injection pressure applied during insert resin molding**.

Therefore, claim 9 clearly requires that the finished product comprise an insulating member preventing deformation of the conductor during a prior manufacturing step wherein a resin injection pressure is applied.

Applicant disagrees with the Examiner's assertion that Murata teaches the claimed insulating member. The premold 5 of Murata, contrary to the Examiner's contention, does not meet the limitations of the claimed insulating member. There is no teaching in Murata that premold 5 is part of the finished product to which resin injection pressure is applied during manufacturing. Claim 9 requires that the claimed brush holder include the insulating member, making it unecessary to provide some external device to aid in deformation prevention during the molding process. The premold 5 of Murata would not have been considered by a skilled artisan to be a viable solution at the time of the invention simply because it does not satisfy the problem addressed, that is, to provide a brush holder with an insulation member that prevents deformation of the conductors included thereon.

Accordingly, Applicant requests that the Examiner's rejection of claim 9 under §103 be reversed and for at least the same reasons Applicant solicits reversal of the rejection under §103 to claims 9-14, which depend from claim 9.

Respectfully submitted,

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